

2-58 MAINTENANCE & TUNE-UP

3. If these condition do not exist, proceed as follows.
4. Disconnect the link rod between the CDI magneto base and the magneto control lever at the ball joint.
5. Rotate the magneto base plate until the stopper is in contact with the stopper on the cylinder.
6. Twist the throttle grip to the wide-open throttle position.
7. Adjust the connector on the end of the link rod so the center to center length is 1.81 in. (46mm).
8. Connect the link rod between the CDI magneto base and the magneto control lever at the ball joint without moving the magneto base.

40 Hp (2-Cylinder) Model

DYNAMIC TIMING

- ◆ See Figures 181, 182 and 183



This includes most C40 models.

1. Mount the engine in a test tank or on a boat in a body of water.
2. Obtain a timing light and clip the pickup lead to the No. 1 spark plug lead.
3. Connect a tachometer to the powerhead per the instructions with the instrument.
4. Start the engine and allow it to warm to operating temperature.
5. Push the magneto control lever downward until the lower screw tip barely makes contact with the stopper. This action fully advances the timing. Allow the powerhead to operate at approximately 4,500 rpm.
6. Aim the timing light at the timing pointer. The pointer should align halfway between the 21-23° BTDC marks embossed on the flywheel. If the marks align, the full-advanced timing is correctly set.
7. Shut down the powerhead. Pry off the link from the ball joint at the magneto control lever ball joint. Restart the powerhead. Pull the magneto control lever all the way up. Aim the timing light at the timing pointer and use the free end of the link rod to rotate the magneto base until the timing pointer aligns properly.
8. Shut down the powerhead. Adjust the length of the link rod to snap back onto the ball joint of the magneto control lever without moving the magneto base or the magneto control lever. Snap the link rod back onto the ball joint of the magneto control lever.
9. Start the powerhead and allow it to idle. Check to be sure the upper adjusting screw tip barely makes contact with the stopper.
10. Aim the timing light at the timing pointer. The pointer should align half way between the 1-3° ATDC marks embossed on the flywheel. If the marks align, the fully retarded timing is correctly set and the timing procedures are completed. If the marks do not align, then proceed as follows: With the powerhead still running, continue to aim the timing light at the pointer and at the same time adjust the upper adjusting screw until the pointer aligns properly. Shut down the powerhead.

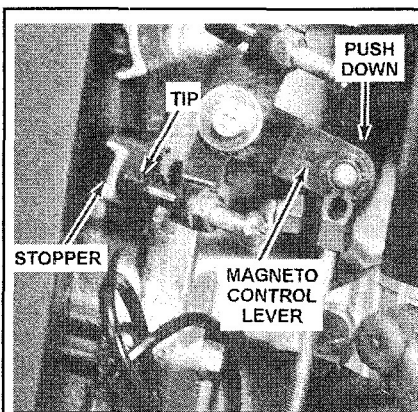


Fig. 181 Push the magneto control lever downward until the lower screw tip barely makes contact with the stopper

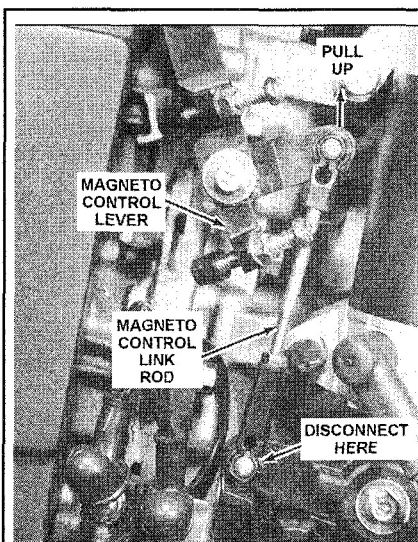


Fig. 182 Pry off the link from the ball joint at the magneto control lever ball joint

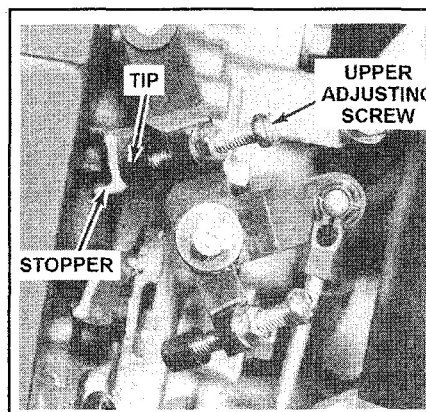


Fig. 183 Check to be sure the upper adjusting screw tip barely makes contact with the stopper

STATIC TIMING

Full Advance Adjustment



- ◆ See Figures 184 thru 187

1. Remove all three spark plugs from the powerhead. Install a dial indicator into the No. 1 cylinder opening.
2. Rotate the flywheel clockwise until the dial indicator indicates the piston is at TDC (top dead center). Check the timing pointer to be sure it aligns with the TDC mark embossed on the flywheel. If the mark is misaligned, loosen the set screw on the timing plate and align the pointer with the flywheel mark. Tighten the screw to hold the adjustment.
3. Rotate the flywheel clockwise until the timing pointer aligns with 21-23° on the flywheel.
4. Rotate the lower adjustment screw until the tip contacts the stopper. Tighten the locknut to hold this new adjusted position.

Full Retard Adjustment

- ◆ See Figures 188 and 189

This includes most C40 models.

1. Rotate the flywheel clockwise until the timing pointer aligns with the 1-3° ATDC mark embossed on the flywheel.
2. Rotate the upper adjustment screw until the tip contacts the stopper. Tighten the locknut to hold this new adjusted position.

CARBURETOR LINK

- ◆ See Figures 190 and 191



This includes most C40 models.

1. Pull off the accelerator lever rod. This rod connects the three throttle levers together and is a set length. Loosen but do not remove the throttle valve screws on the top and center carburetors, by rotating the screws clockwise. Yes, they are rotated clockwise, because they have left hand threads. This fact is emphasized by the arrow and the word OFF embossed on each lever.
2. Loosen the idle speed adjustment screw. Snap on the accelerator rod over all three ball joints. Push down on the cam to close all throttle valves and then tighten the throttle valve screws on the top and center carburetor. This is accomplished by rotating the screws counterclockwise.

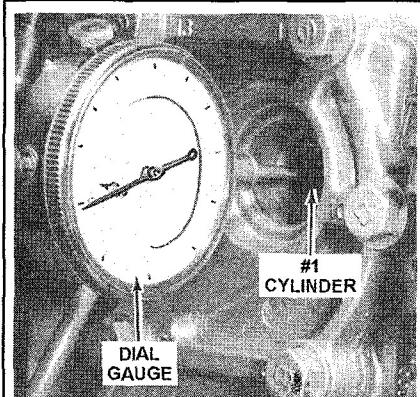


Fig. 184 Install a dial indicator into the No. 1 cylinder opening

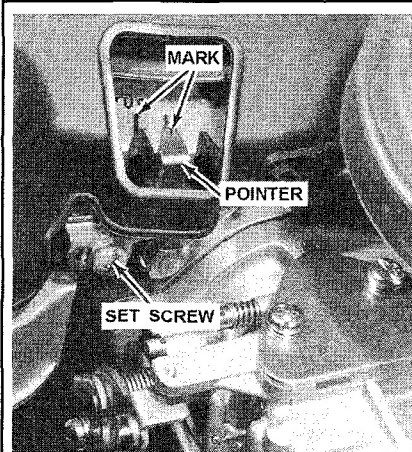


Fig. 185 Rotate the flywheel clockwise until the dial indicator indicates the piston is at TDC (top dead center)

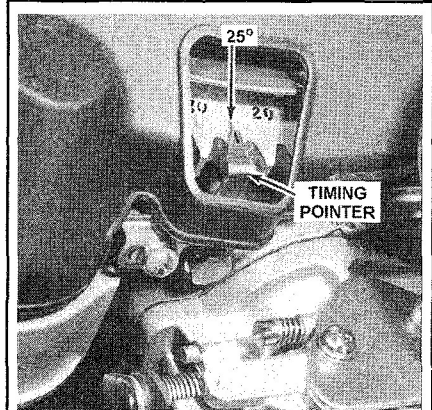


Fig. 186 Rotate the flywheel clockwise until the timing pointer aligns with 21-23° on the flywheel

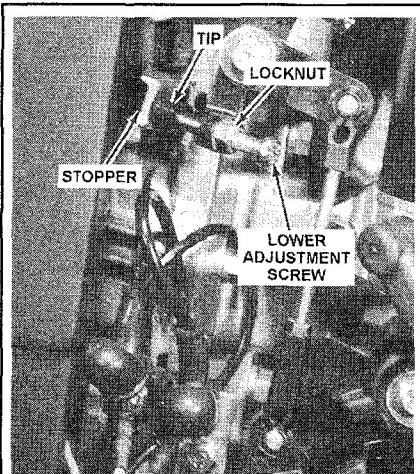


Fig. 187 Rotate the lower adjustment screw until the tip contacts the stopper

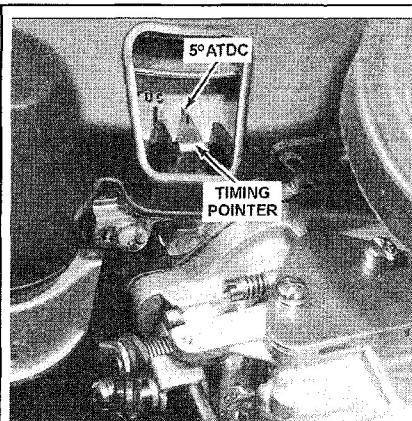


Fig. 188 There is no mark between TDC and 5° on the flywheel. Adjust the timing so the pointer falls just to the left of the 5° mark

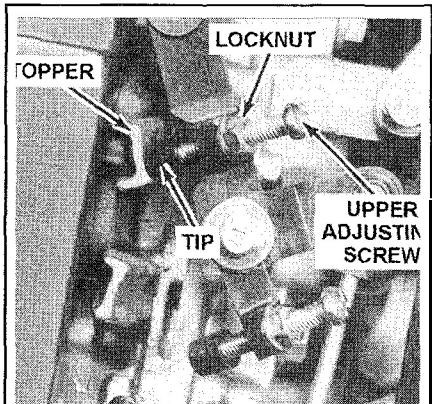


Fig. 189 Rotate the upper adjustment screw until the tip contacts the stopper and tighten the locknut

IDLE SPEED

◆ See Figure 192



This includes most C40 models.

1. Mount the engine in a test tank or move the boat to a body of water.
2. Remove the cowling and connect a tachometer to the powerhead.
3. Turn the pilot screw in until it lightly seats and then back out the specified number of turns, as indicated in the Carburetor Set-Up Specifications chart, found in the Fuel System section.
4. Start the engine and allow it to warm to operating temperature. Place the engine in gear.
5. Check engine speed at idle. The powerhead should idle at the rpm specified in the Tune-up Specifications chart.
6. Place the engine in gear and check engine trolling speed in the same manner.
7. If adjustment is necessary, rotate the idle adjustment screw (not the pilot screw) until the powerhead idles at the required rpm.

THROTTLE LINK

◆ See Figure 193



This includes most C40 models.

1. Disconnect the magneto control link.
2. Align the full-closed mark on the pulley with the mark on the bracket.

3. Rotate the magneto base clockwise until the full-closed side of the magneto base stopper No. 1 contacts the adjust bolt for the magneto base stopper No. 2.

4. Adjust the plastic snap-on connector on the end of the link rod until it can be reconnected to the control lever ball stud without changing the position of the linkage or magneto base.

5. Align the wide-open throttle mark on the pulley with the mark on the throttle bracket.

6. Adjust the throttle link joint so the wide-open throttle mark on the throttle cam aligns with the center of the carburetor throttle roller.

48/55 Hp (2-Cylinder) Models

IGNITION TIMING



This includes the C55 models.

1. Remove the standard propeller and install a test propeller.
2. Install the outboard in a test tank.
3. Connect a timing light and portable tachometer according to their manufacturer's instructions.
4. Shift the lower unit into NEUTRAL.
5. Start the engine and allow it to warm up for approximately 5 minutes.
6. Place the ignition in the full-retard position manually.

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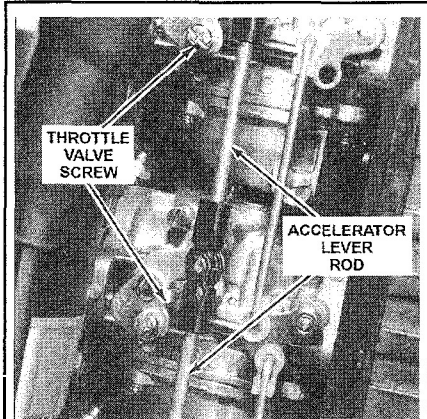


Fig. 190 Accelerator lever rod location adjacent to the throttle screws

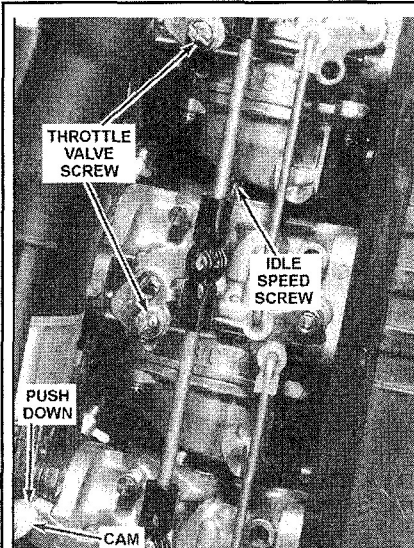


Fig. 191 Push the cam to close all throttle valves, then tighten the valve screws by rotating them counterclockwise

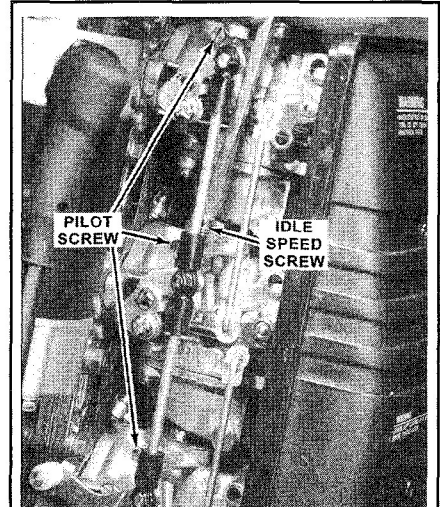


Fig. 192 Pilot and idle speed screw locations on the side of the powerhead

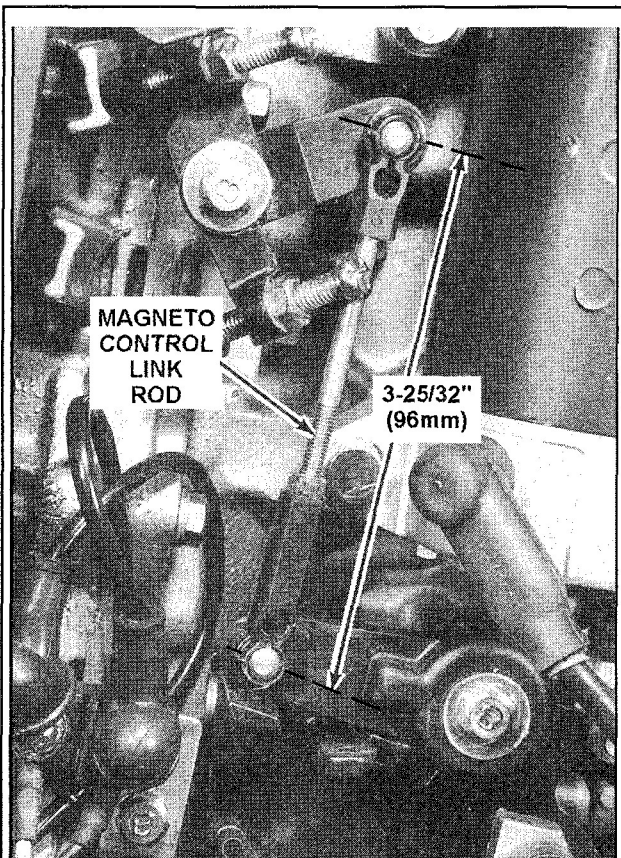


Fig. 193 Magneto link control rod should be adjusted so that it can be reconnected to the control lever ball stud without changing the position of the linkage or magneto base

7. Point the timing light at the timing pointer. The timing pointer should align with the full-retard timing specification as stated in the Tune-up Specifications chart.

8. If the timing pointer does not align, turn the adjusting screw and adjust the timing as necessary.

9. Manually move the magneto control lever to the wide-open throttle

position (full-advanced ignition) and increase engine speed to more than 4,500 rpm.

10. Point the timing light at the timing pointer. It should align with the full-advance timing specification as stated in the Tune-up Specifications chart.

11. If the timing pointer does not align, loosen the locknut, turn the screw and adjust the timing as necessary. Tighten the locknut.

12. To adjust the pick-up timing, manually set the ignition to full-retard. Allow the engine to idle at idle speed. If necessary, adjust the idle speed as described in this section.

13. Bring the throttle cam to contact the throttle lever roller lightly. The throttle valve should not open.

14. Loosen the locknut on the link joint, then disconnect the link rod from the oil pump lever ball stud. Adjust the plastic snap-on connector on the end of the link rod until its hole aligns with the set pin. Install the link joint.

CARBURETOR LINKAGE



This includes the C55 models.

1. Loosen the carburetor idle adjust screw.
2. Loosen the upper carburetor ball joint lock screw.
3. Pull up on the upper carburetor ball joint to remove play between the upper and lower carburetors then tighten the upper lock screw.
4. Move the accelerator lever up and down several times to make sure the upper and lower carburetors open and close simultaneously.

IDLE SPEED



This includes the C55 models.

1. Mount the engine in a test tank or move the boat to a body of water.
2. Remove the cowling and connect a tachometer to the powerhead.
3. Turn the pilot screw in until it lightly seats and then back out the specified number of turns, as indicated in the Carburetor Set-Up Specifications chart, found in the Fuel System section.
4. Start the engine and allow it to warm to operating temperature. Place the engine in gear.
5. Check engine speed at idle. The powerhead should idle at the rpm specified in the Tune-up Specifications chart.
6. Place the engine in gear and check engine trolling speed in the same manner.
7. If adjustment is necessary, rotate the idle adjustment screw (not the pilot screw) until the powerhead idles at the required rpm.